

## ABSTRACT OF THE DISCLOSURE

A linear-in-dB variable gain amplifier is provided, which approximates gain control characteristics to approximate Linear-in-dB characteristics. A gain  $G$  is determined so as to have approximate

- 5 Linear-in-dB characteristics passing through the maximum value, minimum value, and intermediate value of the gain by a capacitance ratio between capacitance of a higher order capacitor string composed of  $n$  capacitors or a lower order capacitor string composed of  $m$  capacitors selectively connected in parallel to an input fixed capacitor, and capacitance of a lower order capacitor
- 10 string, a first correction capacitor string composed of  $n$  capacitors, or a second correction capacitor string composed of  $m$  capacitors selectively connected in parallel to a feedback loop fixed capacitor, in accordance with a gain control signal (Code) of lower order  $m$  bits and higher order  $n$  bits.